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‘Green’ Wine through a Responsible and Efficient Production: a Case Study of a Sustainable Sicilian Wine Producer

Valeria Borsellino^a, Giuseppina Migliore^a, Marcello D’Acquisto^a, Caterina Patrizia Di Franco^a, Antonio Asciuto^a, Emanuele Schimmenti^{a*}

^aDepartment of Agricultural and Forest Sciences (SAF)- Università degli Studi di Palermo – Viale delle Scienze, 13-90128, Palermo- Italy

Abstract

Sustainability is progressively gaining importance in the winegrowing sector. Implementing this concept implies environmental soundness, social equity and economic feasibility. A proliferation of initiatives to develop the sustainable production of wine started officially in Italy since the year 2010. The objective of this paper is to illustrate the reshaping of Sicilian winegrowing according to the ‘Triple bottom line’ approach to sustainability. By analyzing the case-study of the Tasca d’Almerita firm, pilot farm of various national projects in wine-sustainability, we found that adopting sustainable operative, organizational and competitive strategies has lead to a well-managed and growing business with positive socio-economic implications at the local level.

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1. Introduction

Although we are still far from universally accepted definitions and measurement methods (OECD, 2002; Zanolì, 2007; Ohmart, 2008; Zucca et al., 2009; Santini et al., 2013; Szolnoki, 2013; Vecchio, 2014), sustainability is progressively gaining importance in the agri-food sector (Jones, 2012). To-date it represents the basis of the

* Corresponding author. Emanuele Schimmenti Tel.: +39 09123896613;

E-mail address: emanuele.schimmenti@unipa.it

development policies of the European Union (EU) and of other international organizations (Capri and Pomarici, 2014). The capacity of the various agricultural productions to conform their growth paths to the principles of sustainable development constitutes an opportunity for growth not only in a market sense, but also in relationship to society and the environment (Misso and Borrelli, 2013). Moving towards a sustainable agriculture, organized in its ethical, social, environmental and economic dimensions (Ohmart, 2008; Mencarelli and De Propriis, 2014) is becoming a priority for firms operating in agriculture, and needs a constant process of adaptation of the strategies of firm development (Zucca et al., 2009; Misso and Borrelli, 2013; Capri and Pomarici, 2014).

Sustainable agriculture, unlike organic agriculture that focuses only on inputs (e.g., pesticides and fertilizers) and thus growers have to follow specific practices to become certified, has the flexibility to address many important emerging issues such as water use, air quality, energy use, greenhouse-gas production, wildlife habitat and human resources (Ohmart, 2004). That is why, as stated by OECD (2002), in agriculture there is no single path to sustainability and no unique model of sustainable economic activity that could be applicable to all geographic, economic and social environments. On the contrary, the specificities of the local culture, society and economy can generate a variety of methods to implement and articulate sustainability at a local level (Zanoli, 2007). There can be a co-existence of intensive, conventional farming with more-extensive systems providing environmental health, economic profitability, as well as social equity.

Sustainability is a theme of primary importance also in the wine sector at the global level (Zucca et al., 2009; Gabzdylova et al., 2009), but it affects in particular the countries that belong to the “new world of wine” (Australia, New Zealand, South Africa and Chile, besides California). In these latter countries programs and initiatives have been developed to promote sustainability which include a number of standards and voluntary codes concerning the environmental, social and economic sustainability (Gabzdylova et al., 2009; Zucca et al., 2009; Szolnoki, 2013; Corbo et al., 2014; Mencarelli and De Propriis, 2014).

Also in Italy we witness an evident acceleration towards the definition of a model of sustainable development in the wine sector. Mencarelli and De Propriis (2014) discuss 15 national programs created in the last five years on the wine-sustainability theme that have involved firms, academic and research institutions, and service firms. Such programs are meant to contribute to a model of sustainable development for the whole sector. To such initiatives must be added many other projects promoted by vine-growers associations, by ‘consorzi di tutela di denominazioni di origine’ (Consortium for Denomination Trademark), and by some regional administrations. These have varying objectives and use different methodologies, but are meant to promote conceptions of sustainability. There has been, in other words, a generalized increase in the number of sustainability programs. These often come with logos and labels and refer to such concepts as environmental protection, care and protection of landscapes, quality of life for vine-growers and for labor in general, the creation and sharing of value of the territory involving its inhabitants, conservation of cultural traditions (Corbo et al., 2014; Mencarelli and De Propriis, 2014).

The first sustainability program for the Italian wine sector, named SOSain¹, was started in 2010 thanks to the initiative of the Tasca d’Almerita firm, an important Sicilian (Southern Italy) winery both in terms of production volume and of turnover, which decided to adopt a sustainability path and to make all the necessary innovations and managerial changes. By involving accredited Italian scientific research centers, the SOSain project promotes a process aiming to achieve high levels of sustainability and to disseminate them through the entire network of wine production in Sicily.

The objective of this paper is to illustrate the adaptation of the important Sicilian wine sector² (Borsellino et al., 2012; Chinnici et al., 2013; Di Vita et al., 2013; Schimmenti et al., 2013a; Lanfranchi et al., 2014; Schimmenti et al.,

¹ SOSain is sustainability program sponsored by the Italian Ministry for Agriculture, Food and Forestry Policies aiming at promote environmental, social and economic sustainability in Sicily along all the chain (both in the field and the winery). The program is characterized by the “cycle of continuous improvement”, an iterative process through which each winery can assess, monitor and improve its sustainability performances. Wineries participating in the program are obliged to edit themselves a sustainability report presenting the main results of the implemented program. For more information on the program, visit <http://www.sostain.it/EN/Home.aspx>

² In 2013, winegrowing has interested 112.5 thousand hectares, 1 million tons of grapes for a value of 297 million euros, which equals 6.7% of Sicilian production at base prices; the sector presents a high dynamism, especially evident in the number of quality awards obtained: by September 30, 2014, there were 31 denomination trademarks (23 DOC, 7 IGT, 1 DOCG) (Inea, 2014). The commercial flow of Sicilian wine is significant (in 2012, 100.4 million euros of wine were exported to the international markets, while the import amounted to 1.6 million euros), and

2014) to the new scenario of sustainable agricultural productions; these in fact receive more and more attention by the academia, institutions, winegrowing associations, entrepreneurs and also by the consumers. To do so we analyze the case-study of the Tasca d'Almerita winery, which is, as said above, the pioneer of sustainable production in Sicily, and also the pilot firm of various national projects aimed at the improvement of sustainability in wine production.

Exploring the perception by the management of the benefits of sustainable practices and their environmental benefits, economic costs and benefits should provide useful data for stakeholders and policy makers interested in enhancing overall sustainability of the wine industry.

2. Methodology

The present work uses a case study method: we examine a single “sustainable” winery in some detail. This type of empirical enquiry is useful to investigate most contemporary phenomena (Yin, 2003) and is more appropriate than other qualitative research methods in examining corporate decision making process (Chetty, 1996).

The investigation of the Tasca d'Almerita was carried out through direct interview with the sustainability representative of the winery, as he was in the position to decide and reflect upon the farm's implementation of sustainability initiatives.

We used a questionnaire specifically designed on the basis of other survey tools used in former researches in the wine sector (Schimmenti et al., 2014) and in other agricultural sectors (Schimmenti et al., 2011; Di Vita et al., 2013; Schimmenti et al., 2013b), as well as in wine industry sustainability (Atkin et al., 2012; Szolnoki, 2013; Mencarelli and De Propriis, 2014; Vecchio, 2014).

The questionnaire has three main sections. At the beginning, general information was asked about the interviewed people (age and position in the firm organization) and the farm (name, entity of the labor force, total firm area and vineyard area, number of vine varieties, quantities produced, etc.). The second section was designed to gain information about sustainability (its perception and importance, sustainable practices currently employed in the vineyards and in the winery and the year they were started, reasons for their adoption, number of wines produced and of wines with the indication of sustainable techniques, participation to sustainability programs and projects, effects of the sustainable techniques upon the strategy and performance of the firm). The last section concerns the commercial aspects of the firm's wine production (type of marketing, packaging, distribution channels, sale markets, revenue classes and revenue variation in the last three years). The questionnaire allowed the collection of socio-structural, productive and commercial data with reference to the 2014 year.

Following previous scholarly approaches, the questionnaire included open ended questions, closed ended questions (multiple choice in “check-all-that-apply” form, where in some cases answers had to be ranked from the most important to the less) and Likert scale questions (scale ranged 1 to 5, from strongly disagree to strongly agree).

The final questionnaire was previously tested with the advice of opinion leaders (agribusiness professionals, local academics, etc.); corrections were made following their suggestions.

The questionnaire was sent via email prior to the meeting. The interview was undertaken in February 2015 during a site visit in one of the 5 “tenute” (holdings) of the firm (Regaleali). Throughout the entire interview, the respondent was continuously encouraged to unreservedly add any relevant information to the discussion. Follow up questions, clarifying specific issues or uncovered topics, were delivered through telephone or emails subsequently.

3. Findings

In the present section, after presenting the productive and socio-structural characteristics of the firm, we illustrate why and how Tasca d'Almerita applied the ‘Triple-bottom-line’ approach to sustainability (Elkington, 1997), the perception by the firm's management of the concept of sustainable production, the inevitable firm adaptation and the main commercial aspects.

with its positive balance significantly influences the agri-food balance of regional trade.

3.1 Socio-structural and productive aspects

Although it was founded in 1962 in the form of a limited company (Srl), Tasca d'Almerita has in fact a bicentenary tradition (since 1830).

The total area of the firm is 651 hectares; the vineyards' area covers 421.70 hectares (about 65% of the total) distributed in 5 holdings in various areas of Sicily; the vineyard area does not go beyond 70% of the total in any of these properties. There in fact are also herbaceous crops, and other types of trees, among which olives, as well as woods, grazing land and water areas. This natural and crop variety, by breaking the continuity of the vineyards, greatly improves the landscape. This goes to show that the firm is multifunctional not only in its capacity to diversify its productive activities, but also in creating and protecting the agricultural landscape while respecting its ancient natural and productive tradition.

Buildings cover 34,000 square meters including 2 wine-making plants, together with plants for the bottling, packaging and storage of wines (for an area of 10,278 square meters).

The firm is also economically significant in terms of employment. The workforce is composed of 62 permanent contract persons (30 white collar, 23 blue collar and 9 executive) and 55 workers with non-permanent contracts, all resident in the vicinities of the firm's 5 holdings. This has positive consequences in terms of the area's economic development, which is a fundamental issue in a region such as Sicily that presents very high unemployment rates. Also, we witness an interest by the labor force in the growth of the firm, thanks to the investments the management have made in terms of personnel development, training and assistance, to make the staff gain qualifications and higher skill level, and its involvement in the creation and evolution of the firm brand and vision. The average management age is 46.

The firm grows 26 varietal grapes, 12 of which are autochthonous, with a total production, in 2014, of 36,600 hl. Such production has been obtained with growing techniques that integrate some typical biodynamic and organic techniques with conventional techniques. This mixture is operated with an eye to the efficient utilization of resources and respect for the environment.

3.2 Perception and implementation of sustainability

Tasca d'Almerita has officially undertaken the path to sustainability in the year 2010 by promoting the SOStain project, although some good practices go back to the days of its foundation (in particular, promotion of territory and crop diversification). The firm now uses a large number of sustainable techniques, as presented in Table 1.

Table 1 – Sustainable techniques implemented

Technique	Year it started	Technique	Year it started
Minimization of the usage of fertilizers, herbicides, fungicides and synthetic pesticides	2010	Wine-making processes without chemicals	2012
Reduction of energy expenditure	2010	Renewable energy sources (biomasses, photovoltaic, etc.)	2011
Produce traceability of the grapes and wines produced	1998	Defense of the landscape	1990
Defense of biodiversity	1990	Crop diversification	1962
Labor security	1995	Labor training on environmental defense and sustainability	2010
Waste recycling	1990	Reduction of water consumption	2010
Efficient purification of waste waters	1999	Reduction of greenhouse gas emissions	2011
Reduction of the environmental impact in the supply chain	2012	Promotion of the territory	1962
Firm's carbon and water footprint	2011	Reduction of the weight of the bottles	2012

The firm contributes to the valorization of the image of the areas where it operates, and more in general of the region itself, also by means of the "Natura in Tasca" project which involves 16 producers for a total of 39 Sicilian quality agri-food productions. Simultaneously it strengthens the tourist vocation of the area by means of making up events and offering hospitality in its farm.

Coming to the types of sustainable techniques indicated in the table above, the Tasca d'Almerita firm adopts all the techniques listed in the questionnaire but the organic and environmental certification. Although it uses some techniques typical of biodynamic and organic farming, is not interested in complying with all the strict EU environmental and animal welfare rules required to obtain such certifications. More specifically, this latter choice is due to the productive risks caused by weather and phyto-sanitary threats, which represent economic risks for a farm of this size, as well as to problems in the regulations themselves.

Among the reasons that have contributed to the decision to produce sustainable wine, the following have been indicated, in order of importance: ethical choice; presence of a consumer demand for sustainable products; protection of biodiversity; EU subsidization³; higher quality product; better control of firm management; differentiation from the competitors.

Considering the perception and interpretation of the concept of sustainability, the firm's priority is the satisfaction of the needs of the present generation without compromising the capacity of the future generations to satisfy their own needs; secondly, we find considerations about climate, the environment, and social and economic questions.

The three dimensions of sustainability – environmental, social and economic – are given a decreasing importance in that order in pursuing and implementing the firm's policy of sustainable development.

Concerning the impact of the sustainable techniques on the firm, we have found out the extreme importance it has for the strengthening of the firm's reputation, followed by a more efficient use of resources and a higher customer satisfaction. However, the firm management is rather indifferent to the impact on production costs, operational financial risks and the access to capital from external sources; among the aspects that have undergone the least impact from sustainable techniques, we point out the capacity to enter new market outlets, which is tied to the firm's strategies tending to consolidate the present markets, which are sensitive to sustainable productions. They also take into account the little interest for sustainability shown to our days by the new markets that have been explored, such as those of Asia.

Tasca d'Almerita has joined several sustainability programs and projects in the wine supply chain (SOStain, Magis, Tergeo, Viticoltura sostenibile V.I.V.A. and Ecoprowine); it has acted as pilot firm for some of them, and/or it has been the actual promoter of such initiatives. This allows the firm to obtain consultancies for the training of its personnel and for learning the techniques of self evaluation of firm sustainability.

Although they deem the practice of sustainability a complex task, the self-evaluation of the performance by the firm is positive both for what concerns the obtainment of the planned strategic objectives and also in comparison to the sector's average, and more than positive for what concerns the main direct competitors.

Coming to the wine supply chain networks, the firm prefers to use sustainability as operational instruments in the selection of partners. Simultaneously, it attributes little importance to the synergic project works towards sustainability goals.

To and from knowledge flows are managed by means of training activities and the pro-active participation to sustainability forums.

3.3 Commercialization

We have preliminarily found out that the firm adopts the same strategies and utilizes the same destination markets regardless of the type of wine produced, and therefore regardless of the sustainable techniques logo.

In particular, the firm's management considers as highly influential factors for its own competition strategies quality and production costs, followed closely in terms of importance by marketing, logo and distribution. The price, packaging and certification factors are in the middle part of the Likert 1-5 scale.

Tasca d'Almerita at present supplies the market with 20 types of wine with labels reporting information about the firm's sustainability (16 carry the SOSain logo, 2 the VIVA logo, and 2 show the writing "senza solfiti aggiunti",

³ This is intended as a public cofunding provided through the 2007-2013 Rural Development Programme (RDP) for Sicily, which is addressed towards structural interventions on farms.

without solphites) out of a total of 44 labels. The “sustainability” logos are a useful tool to reduce the information asymmetry that characterizes the market of wines (Corduas et al., 2013).

80% of the wine produced comes in 0.75 l bottles (about 3.5 million pieces, of which 2.5 million pieces with sustainability logo) and bag in box of 5 l (about 25,000 pieces); whatever is left is sold unbottled.

Sale takes place above all through agents in its own sale network (53% of total production) and through importers (45%). The final destination of the wine is prevalently HO.RE.CA. (Hotel/Restaurant/Café) (79%) and, secondarily, wine shops and bars (20%) and Large-scale retail channel (1%). They use their internet site exclusively as a commercial “shop window”; they also resort to fairs, brochure and newspapers, while having wine tasting in the firm and out of it.

Tasca d’Almerita is strongly oriented to the foreign markets, where it sells about 60% of the total volume produced. Its foreign market is mainly the EU countries and North America; nonetheless, there are interesting percentages being shipped to Asian countries and extra-EU European countries.

The gross revenue is about 16 million euros in 2014, of which 60% from wine with sustainability logo. It has increased in the last 3 years both in total value and in that relative to foreign markets.

4. Conclusions

Nowadays sustainable development has become an important theme in wine industry. We witness a proliferation of initiatives to develop the sustainable production of wine at the international level since the early 1990s and only in the last decade in Italy. Despite such dynamism, we notice the lack of a common, shared language (techniques, methodologies, indicators, instruments, information, etc.) that could help the consumer understand the concept of sustainability, that is not, according to some authors (Zucca et al., 2009; Corbo et al., 2014), among the most important factors that influence consumption choices for wine. At the same time from the cross-cultural study conducted by Szolnoki (2013) the difficulty in defining the term “sustainability” emerges, because not only each country but also each entrepreneur has a different understanding of its meaning in the wine industry. Thus, there is the need for planning and implementation of development strategies for the sector’s sustainable growth capable to take into account both the specific firm elements and the variety and diversity of the various territories.

The results of our research concerning one wine farm in Sicily that has been a pioneer in such techniques suggest that adopting sustainable productive methods has led in good technical and financial results for Tasca d’Almerita with positive socio-economic implications also at a local level. The winery produces a high quality product which is marketed in key markets both national and international. They have excellent relationships with their employees, and have improved their business efficiencies and management systems, thus practicing the ‘Triple bottom line’ approach to sustainability.

Basing on what the interviewed person has declared it is possible to say that the firm we studied has been pushed to undertake a sustainability path by reasons that are prevalently internal to the firm itself, i.e., ethical, personal, and economic opportunism reasons.

The wide range of actions implemented by the firm management witness to the fact that all the decisions are compatible with the basic strategic option of the differentiation of supply (Atkin et al., 2012) but not with cost leadership. In this last case the reason could be found in the short span of time for the implementation of some sustainable techniques. In fact, in the short period there are some increased costs (for instance, the substitution of chemical herbicides with sustainable techniques), which is nonetheless possible to limit through the economies coming from the reduced utilization of some inputs (water, pesticides, energy) (as also stated by Thompson and Forbes, 2011), and through changes in the realization of specific production phases. Such elements, together with the re-organization and adaptation of firm management could insure, in the medium and long period, a higher efficiency in the use of resources.

Although having focused our attention on a single “sustainable” winery could seem an actual limit of the study, indeed it allowed us to verify in depth how to successfully reshape the operational, organizational and competitive strategies according to the ‘Triple bottom line’ approach to sustainability. It is also useful to address further research to other Sicilian wine firms which use sustainable production methods based on the best use of natural and social resources and also prove socially responsible, economically efficient and profitable for the operators.

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